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Spin kinetics in Kondo lattice with heavy fermions

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Abstract

We investigated the spin dynamics in the heavy fermion compounds YbRh2Si2and YbIr2Si2. The contributions of the resonant and nonresonant parts of the total transverse magnetization to the electron spin resonance (ESR) parameters are analyzed for different orientations of the static and microwave magnetic fields. It is shown that at high temperatures, when the Kondo effect is absent, the nonresonant terms may be essential in the case of the perpendicular orientation of the static magnetic field to the crystal symmetry axis. In the presence of the Kondo effect the nonresonant parts do not make a significant contribution to the ESR parameters for any configuration of the magnetic fields.

Keywords

Collective spin mode, Electron paramagnetic resonance, Heavy fermions, Kondo effect, Kondo lattice